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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,357	04/20/2005	Eiji Kataoka	3600-502	1576

33432 7590 04/24/2007
KILYK & BOWERSOX, P.L.L.C.
400 HOLIDAY COURT
SUITE 102
WARRENTON, VA 20186

EXAMINER

ZHU, WEIPING

ART UNIT	PAPER NUMBER
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1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/532,357	KATAOKA ET AL.	
	Examiner	Art Unit	
	Weiping Zhu	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/26/2006 and 5/12/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

The application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.4999, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted

- I. Claims 1-6 and 11-19, drawn to a niobium powder.
- II. Claims 7-10 and 20, drawn to a method of producing niobium powders.

The inventions listed as I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature in all groups is the niobium powder. This element cannot be a special technical feature under PCT Rules 13.2 because the element is shown in the prior art. Habecker et al. (US 6,402,066 B1) disclose a niobium powder (abstract), which is substantially identical to the claimed niobium powder. Inventions I-II lack the same or corresponding special technical features. Therefore unity of invention is lacking and restriction is appropriate.

During a telephone conversation with Mr. Luke Kilyk on March 27, 2007 a provisional election was made with traverse to prosecute the invention of I, claims 1-6 and 11-19. Affirmation of this election must be made by the applicant in replying to this

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Office action. Claims 7-10 and 20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should the applicant traverse on the ground that the inventions are not patentably distinct, the applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103 (a) of the other invention.

The applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Habecker et al. (US 6,402,066 B1).

With respect to claims 1-4, Habecker et al. ('066 B1) disclose a niobium powder, which has a capacitance ranging from 65 to 250 kCV/g (col. 10, lines 39-50) when formed into a sintered body of 3.5 g/cm³ (col. 14, lines 1-16).

Habecker et al. ('066 B1) do not disclose the CV retention as claimed in the instant claims 1-4. However, Habecker et al. ('066 B1) disclose the ratio of the capacitance formed with 35 V to the capacitance formed with 20 V for some samples. The ratios are 0.61 and 0.75 for the capacitances formed with 20 V being 204 kCV/g and 161 kCV/g respectively (Table 1, samples 7-10). The niobium powder of Habecker et al. ('066 B1) having high capacitance have enabled higher forming voltages ranging from 50 to 80 V, higher working voltages ranging from 10 to 20 V, lower DC leakage and higher BET surface area (col. 11, lines 20-26). It is well held that discovering an optimum value of a result-effective variable involves only routine skill in the art. In re Boesch, 617, F.2d 272, 205 USPQ 215 (CCPA 1980). In the instant case, the CV retention as claimed is a result-effective variable, because it would directly affect the effectiveness of high formation voltage applications as disclosed by Habecker et al. ('066 B1) (col. 11, lines 6-26). Therefore, it would have been obvious to one of ordinary

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skill in the art to optimize the CV retention of Habecker et al. ('066 B1) in order to achieve the desired properties. See MPEP 2144.05 II.

With respect to claim 6, Habecker et al. ('066 B1) disclose that the total amount of nickel, iron and chromium contained in the niobium is between 5 and 200 ppm, which overlaps the claimed range. A prima facie case of obviousness exists. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the claimed range within the disclosed range of Habecker et al. ('066 B1), because Habecker et al. ('066 B1) teaches the same utility in the entire disclosed range.

With respect to claims 6 and 17-19, Habecker et al. ('066 B1) disclose that any remaining magnesium used to deoxidize the niobium powder is substantially leached out (col. 8, lines 35-40). Habecker et al. ('066 B1) does not disclose any presences of sodium and potassium in the niobium powder as impurities. One of ordinary skill in the art would expect that the remaining level of magnesium after the leaching and the levels of sodium and potassium in the niobium powder of Habecker et al. ('066 B1) would have met the claimed limitations in the instant claims 6 and 17-19.

With respect to claims 11-13, Habecker et al. ('066 B1) disclose substantially identical products as claimed including a sintered body formed from the niobium powder (col. 10, lines 19-28), an anode for a capacitor formed from the niobium powder having a DC leakage of from about 5.0 na/CV to about 0.50 na/CV (col. 11, lines 15-20) and a solid electrolytic capacitor comprising the said anode (col. 10, lines 33-38).

3. Claims 5 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Habecker et al. ('066 B1) in view of Rao (US Publication 2002/0033072 A1).

Habecker et al. ('066 B1) disclose the niobium powders have high BET surface areas ranging from $6.0 \text{ m}^2/\text{g}$ to $15.0 \text{ m}^2/\text{g}$ (col. 9, lines 26-54) without specifying the pore size distribution in the niobium powder, which is closely related to the BET surface area, as claimed in the instant claims 5 and 14-16. However, it is well held that discovering an optimum value of a result-effective variable involves only routine skill in the art. In re Boesch, 617, F.2d 272, 205 USPQ 215 (CCPA 1980). In the instant case, the pore size distribution in the niobium powder is a result-effective variable, because it would directly affect the Dissipation Factor for the anode and other beneficial properties as disclosed by Rao ('072 A1) (paragraph [0100], page 7). Therefore, it would have been obvious to one of ordinary skill in the art to optimize the pore size distribution of Habecker et al. ('066 B1) in order to achieve the desired properties. See MPEP 2144.05 II.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WZ

4/4/2007


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